

RXO-LFtenna

by
G3RXO

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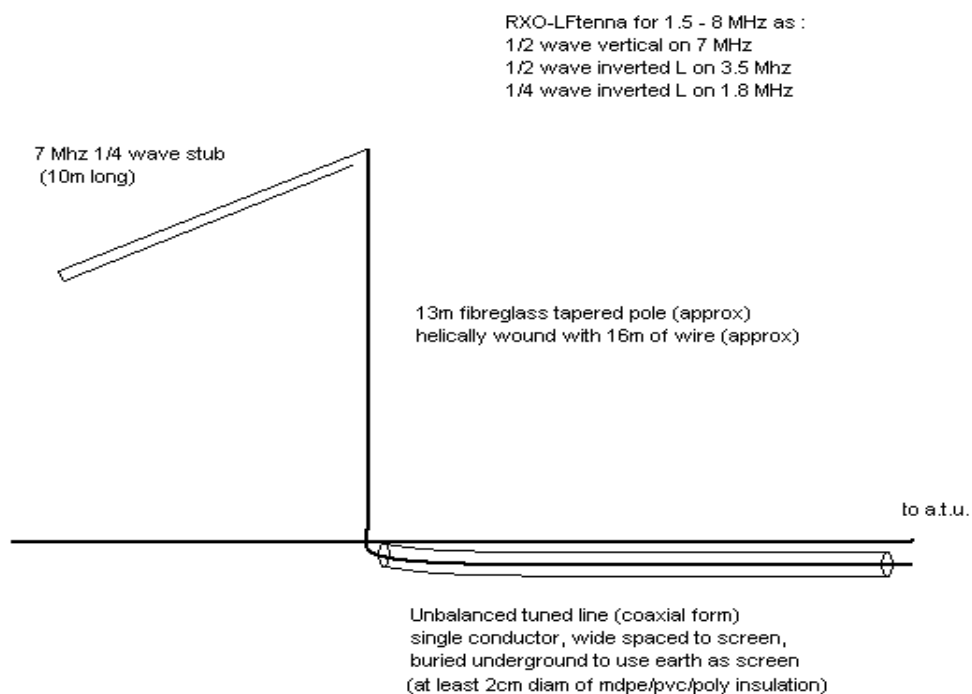
The RXO-LFtenna is a broadband LF antenna covering 40, 80 and 160m ~ a frequency range of about 4:1

It is a vertical radiator which appears close to 1/2 wave long at 40m by winding the conductor as a helix on a shorter fibreglass pole

The current node at lower frequencies is drawn higher up the vertical section by the top loading of a 40m 1/4 wave stub

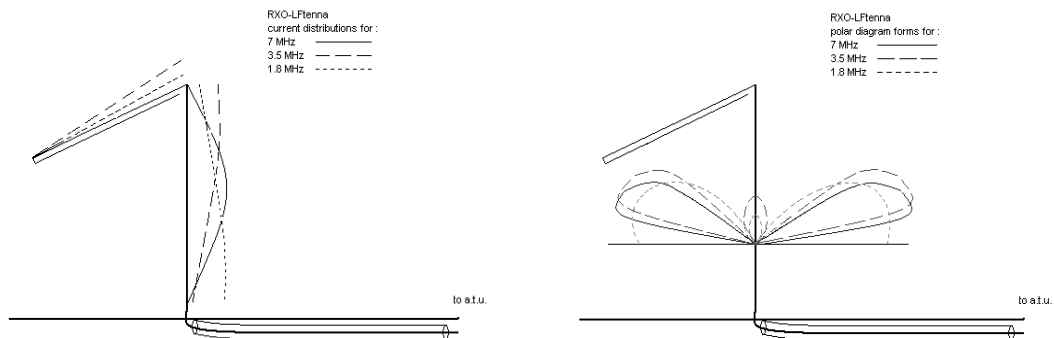
The horizontal radiation from the stub is zero on 40m and minimal, since it is partly self cancelling, on 80 and 160m

On 40m the antenna acts as a 1/2 wave vertical, on 80m as a 1/4 wave vertical but with the current at the top, and on 160m as the current portion of a 1/4 wave vertical



This has been monitored on WSPR to give G to VK on 7 MHz using 5w of -15dB SNR and excellent intercontinental results on 3.5 and 1.8 MHz also

Note: 10m fibreglass poles are available for beach windsocks, windsurfers' flags, and angling



It presents varying feed impedances over the frequency range which need to be tuned by an a.t.u.

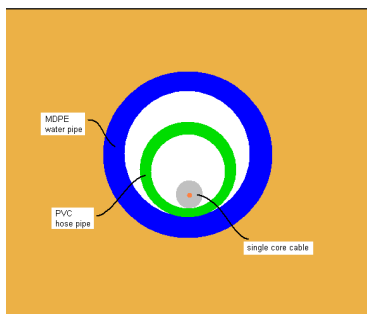
It is an unbalanced load and an unbalanced tuned line may be used to connect it to a station a.t.u.

Widely spaced concentric conductors are an unbalanced line and can be constructed over or under ground

For an under ground feeder the earth makes the outer conductor but good insulation is required for the centre conductor, 2cm diameter or so for amateur radio power

MDPE (water main pipe) has a better dielectric constant than many cable insulation plastics and is ideal for this use, although not very flexible

Underground unbalanced tuned line



This antenna has low angle propagation on all bands and produces excellent measured results worldwide using the WSPR reporting network

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For a broadband HF antenna see ~ www.standardtrees.co.uk/RXO-Unitenna.pdf